



THE UNIVERSITY *of* EDINBURGH

## Edinburgh Research Explorer

### A 59-year-old woman with visible precordial pulsations

**Citation for published version:**

Moss, AJ, Pessotto, R & Flapan, AD 2017, 'A 59-year-old woman with visible precordial pulsations', *Heart*.  
<https://doi.org/10.1136/heartjnl-2017-312193>

**Digital Object Identifier (DOI):**

[10.1136/heartjnl-2017-312193](https://doi.org/10.1136/heartjnl-2017-312193)

**Link:**

[Link to publication record in Edinburgh Research Explorer](#)

**Document Version:**

Publisher's PDF, also known as Version of record

**Published In:**

Heart

**General rights**

Copyright for the publications made accessible via the Edinburgh Research Explorer is retained by the author(s) and / or other copyright owners and it is a condition of accessing these publications that users recognise and abide by the legal requirements associated with these rights.

**Take down policy**

The University of Edinburgh has made every reasonable effort to ensure that Edinburgh Research Explorer content complies with UK legislation. If you believe that the public display of this file breaches copyright please contact [openaccess@ed.ac.uk](mailto:openaccess@ed.ac.uk) providing details, and we will remove access to the work immediately and investigate your claim.



## A 59-year-old woman with visible precordial pulsations

### CLINICAL INTRODUCTION

A retired 59-year-old woman presented to the cardiology clinic concerned with cardiac pulsations that were visible on her chest wall. These were not associated with dyspnoea, syncope or chest discomfort.

Of note, 8 years previously, she complained of recurrent nocturnal diaphoresis and 5 kg weight loss. Blood sampling at that time revealed a microcytic anaemia, reactive thrombocytosis and raised inflammatory markers (erythrocyte sedimentation rate 99 mm/hour, C-reactive protein 161 mg/L). Following an episode of transient diplopia, ophthalmoscopy demonstrated

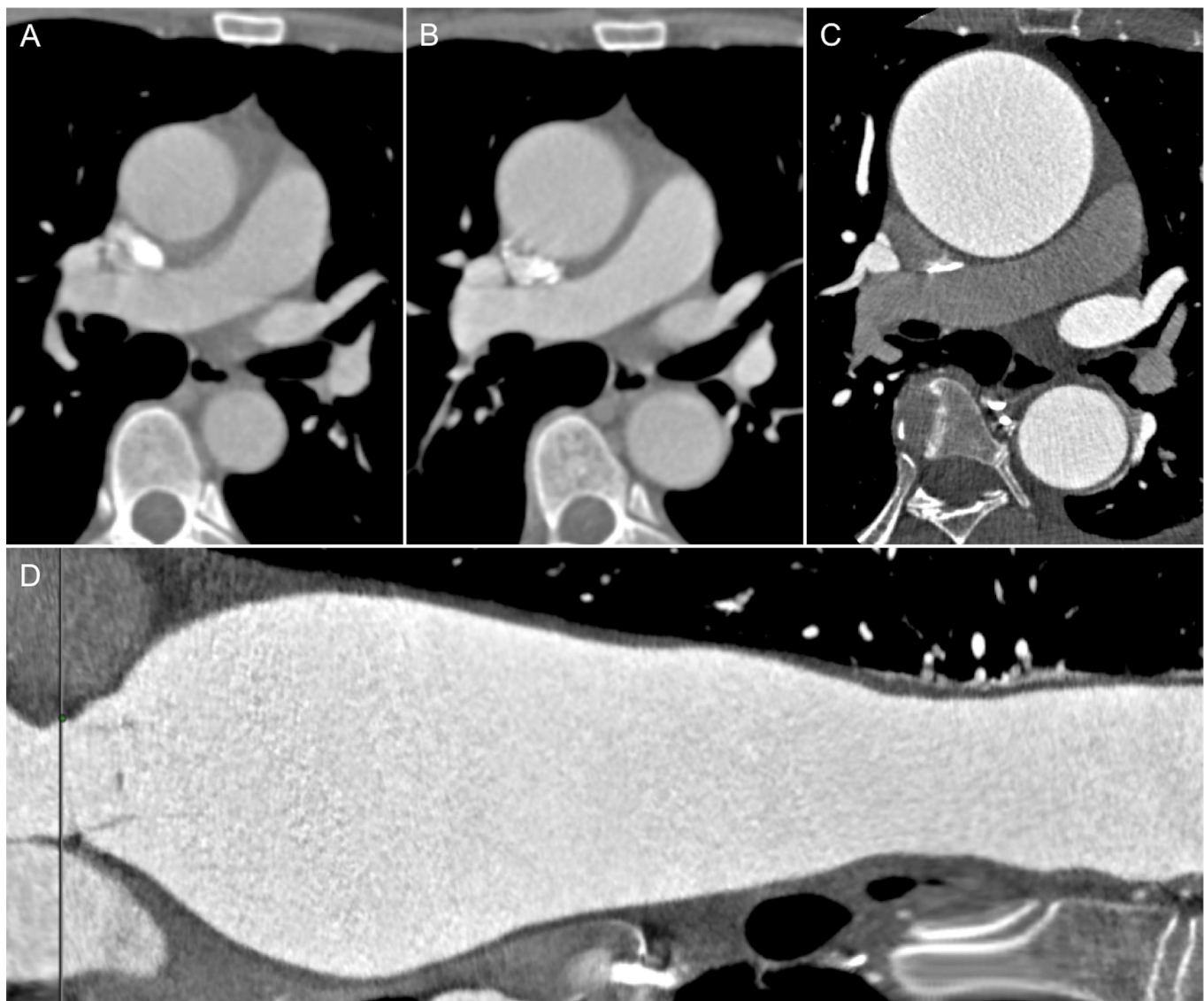
a cotton wool spot in the left inferotemporal retinal arcade. She commenced a 2-year tapering course of 1 mg/kg prednisolone.

On examination, she had a lean physique with a supine blood pressure of 162/60 mm Hg and palpable Corrigan's pulse. She had a prominent apical pulsation and a loud early diastolic murmur was present at the left sternal edge radiating to the apex. Echocardiography showed severe central aortic regurgitation and a dilated aortic root (see online supplementary figure 1). Cardiac CT was performed to clarify the diagnosis (figure 1).

### QUESTION

Which of the following diagnoses best explains this presentation?

- A. Ankylosing spondylitis
- B. Takayasu arteritis
- C. Salmonellosis
- D. IgG4-related aortitis
- E. Giant cell aortitis



**Figure 1** Contrast-enhanced CT of the thorax at index presentation (A) and 6 months (B). Prospective ECG-gated cardiac CT angiogram (75% R-R interval) performed at 8 years from index presentation (C) with a stretched multiplanar reconstruction of the aortic annulus, aortic root and thoracic aorta (D).

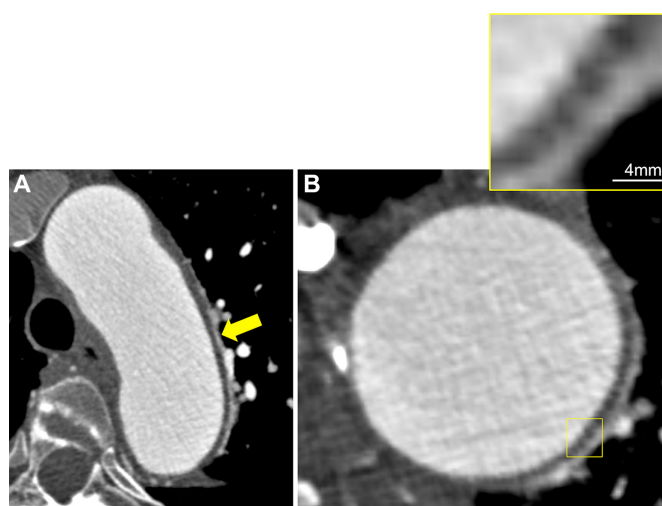
## Image challenge

## CORRECT ANSWER: E

The correct answer is giant cell aortitis. Progressive aortic ectasia is noted on serial imaging. The ECG-gated CT aortogram demonstrates an aortic annulus within normal limits, but there is severe dilatation of the aortic root. The proximal ascending aorta is severely aneurysmal (maximum diameter 77.5 mm). The aortic arch and descending thoracic aorta show circumferential 4 mm intramural thickening in the absence of atheroma and with contrast enhancement of the adventitia (figure 2). The history of polymyalgia rheumatic and the CT pattern of annuloaortic ectasia in the presence of intramural thickening ( $\geq 2$  mm) with adventitial contrast enhancement are compatible with giant cell aortitis.<sup>1</sup>

Takayasu arteritis typically manifests as concentric aortic wall thickening with a 'double ring' appearance on contrast CT, due to inflammation of the adventitia. A later occlusive stage is often characterised by branch vessel stenoses.<sup>2</sup> Seronegative arthropathies are associated with subvalvular and cusp thickening, which are not present in the case.<sup>3</sup> Infections of the aorta are rare, however, *Salmonella* aortitis can occur in immunocompromised patients with coexistent osteomyelitis and an atherosclerotic aortopathy which are not features of this case. IgG4-related disease is a fibroinflammatory condition associated with lymphoplasmacytic infiltrates and retroperitoneal fibrosis.<sup>4</sup>

The patient underwent valve-sparing surgery with replacement of the aortic root, ascending aorta and hemiarch (see online supplementary figure 2). Aortitis is an important diagnosis to consider in the management of suspected vasculitic syndromes.



**Figure 2** ECG-gated cardiac CT angiogram reconstructions of the (A) aortic arch and (B) descending thoracic aorta. Circumferential intramural thickening (4 mm) with adventitial contrast enhancement of the descending thoracic aorta (inset).

Alastair J Moss,<sup>1</sup> Renzo Pessotto,<sup>2</sup> Andrew D Flapan<sup>2</sup>

<sup>1</sup>Centre for Cardiovascular Science, Royal Infirmary of Edinburgh, University of Edinburgh, Edinburgh, UK

<sup>2</sup>Edinburgh Heart Centre, Royal Infirmary of Edinburgh, Edinburgh, UK

**Correspondence to** Dr Alastair J Moss, Centre for Cardiovascular Science, University of Edinburgh, Royal Infirmary of Edinburgh, Edinburgh, EH16 4TJ, UK; [alastairmoss@gmail.com](mailto:alastairmoss@gmail.com)

**Contributors** AM wrote the manuscript. RP and ADF were involved in the clinical care of the patient.

**Competing interests** None declared.

**Patient consent** Obtained.

**Provenance and peer review** Not commissioned; externally peer reviewed.



## OPEN ACCESS

**Open Access** This is an Open Access article distributed in accordance with the Creative Commons Attribution Non Commercial (CC BY-NC 4.0) license, which permits others to distribute, remix, adapt, build upon this work non-commercially, and license their derivative works on different terms, provided the original work is properly cited and the use is non-commercial. See: <http://creativecommons.org/licenses/by-nc/4.0/>

© Article author(s) (or their employer(s) unless otherwise stated in the text of the article) 2017. All rights reserved. No commercial use is permitted unless otherwise expressly granted.

► Additional material is published online only. To view please visit the journal online (<http://dx.doi.org/10.1136/heartjnl-2017-312193>).



CrossMark

**To cite** Moss AJ, Pessotto R, Flapan AD. *Heart* Published Online First: [please include Day Month Year]. doi:10.1136/heartjnl-2017-312193

Received 21 July 2017

Revised 11 September 2017

Accepted 13 September 2017

*Heart* 2017;0:1–2. doi:10.1136/heartjnl-2017-312193

## REFERENCES

- Prieto-González S, Argüis P, García-Martínez A, *et al*. Large vessel involvement in biopsy-proven giant cell arteritis: prospective study in 40 newly diagnosed patients using CT angiography. *Ann Rheum Dis* 2012;71:1170–6.
- Yamada I, Nakagawa T, Himeno Y, *et al*. Takayasu arteritis: evaluation of the thoracic aorta with CT angiography. *Radiology* 1998;209:103–9.
- Tucker CR, Fowles RE, Calin A, *et al*. Aortitis in ankylosing spondylitis: early detection of aortic root abnormalities with two dimensional echocardiography. *Am J Cardiol* 1982;49:680–6.
- Stone JH, Zen Y, Deshpande V. IgG4-related disease. *N Engl J Med* 2012;366:539–51.



## A 59-year-old woman with visible precordial pulsations

Alastair J Moss, Renzo Pessotto and Andrew D Flapan

*Heart* published online November 3, 2017

---

Updated information and services can be found at:

<http://heart.bmj.com/content/early/2017/11/03/heartjnl-2017-312193>

---

*These include:*

### References

This article cites 4 articles, 1 of which you can access for free at:

<http://heart.bmj.com/content/early/2017/11/03/heartjnl-2017-312193#BIBL>

### Open Access

This is an Open Access article distributed in accordance with the Creative Commons Attribution Non Commercial (CC BY-NC 4.0) license, which permits others to distribute, remix, adapt, build upon this work non-commercially, and license their derivative works on different terms, provided the original work is properly cited and the use is non-commercial. See: <http://creativecommons.org/licenses/by-nc/4.0/>

### Email alerting service

Receive free email alerts when new articles cite this article. Sign up in the box at the top right corner of the online article.

---

### Topic Collections

Articles on similar topics can be found in the following collections

[Open access](#) (269)

---

### Notes

---

To request permissions go to:

<http://group.bmj.com/group/rights-licensing/permissions>

To order reprints go to:

<http://journals.bmj.com/cgi/reprintform>

To subscribe to BMJ go to:

<http://group.bmj.com/subscribe/>